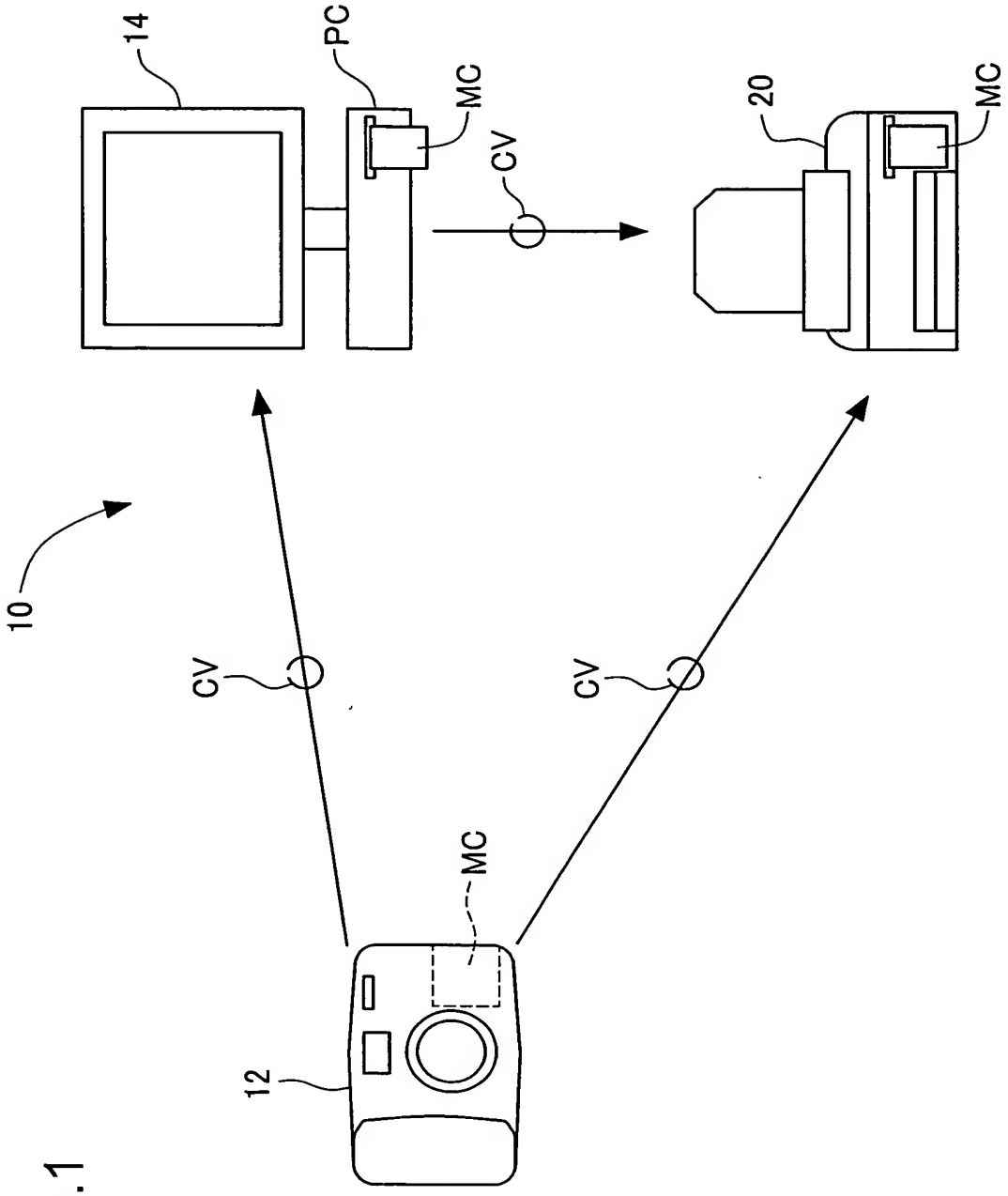


Fig.1

Fig.2

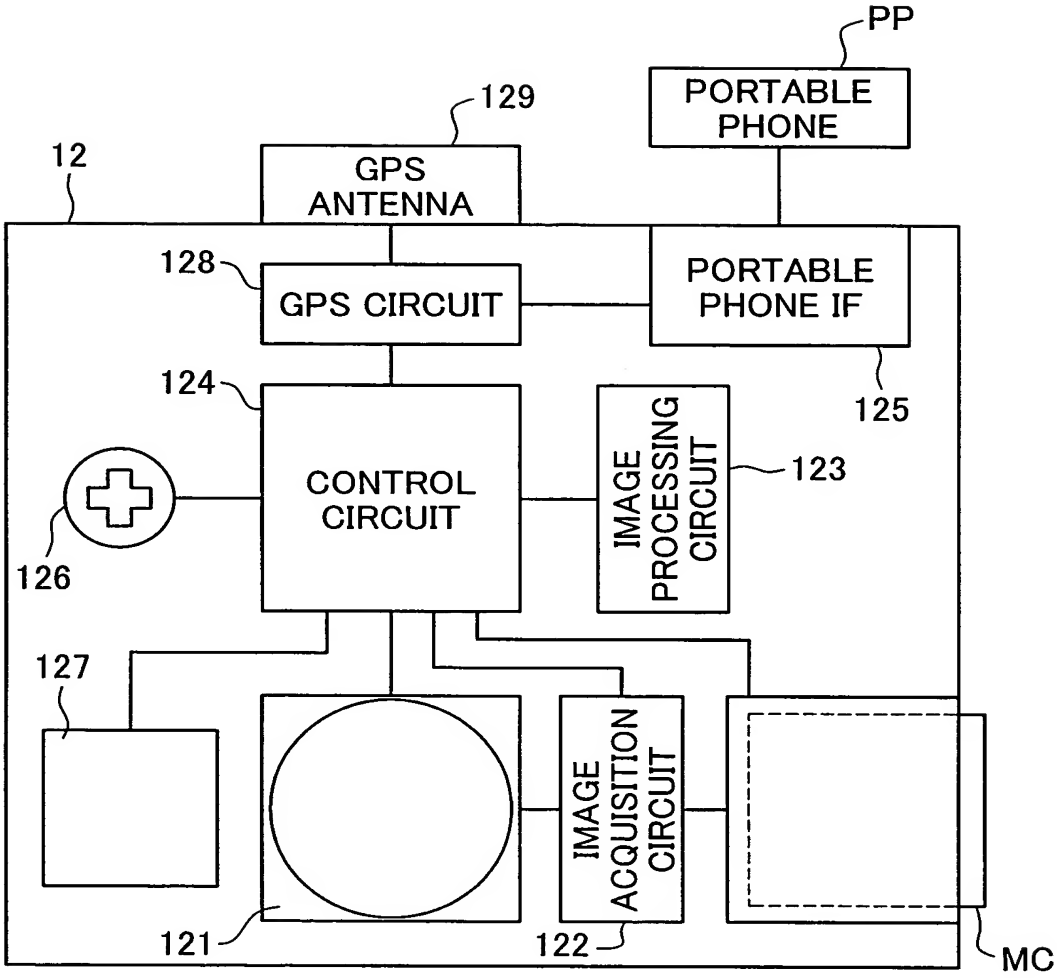

PP
PORTABLE PHONE
129
GPS ANTENNA
12
128
GPS CIRCUIT
PORTABLE PHONE IF
125
124
CONTROL CIRCUIT
IMAGE PROCESSING CIRCUIT
123
126
127
IMAGE ACQUISITION CIRCUIT
121
122
MC

Fig.3

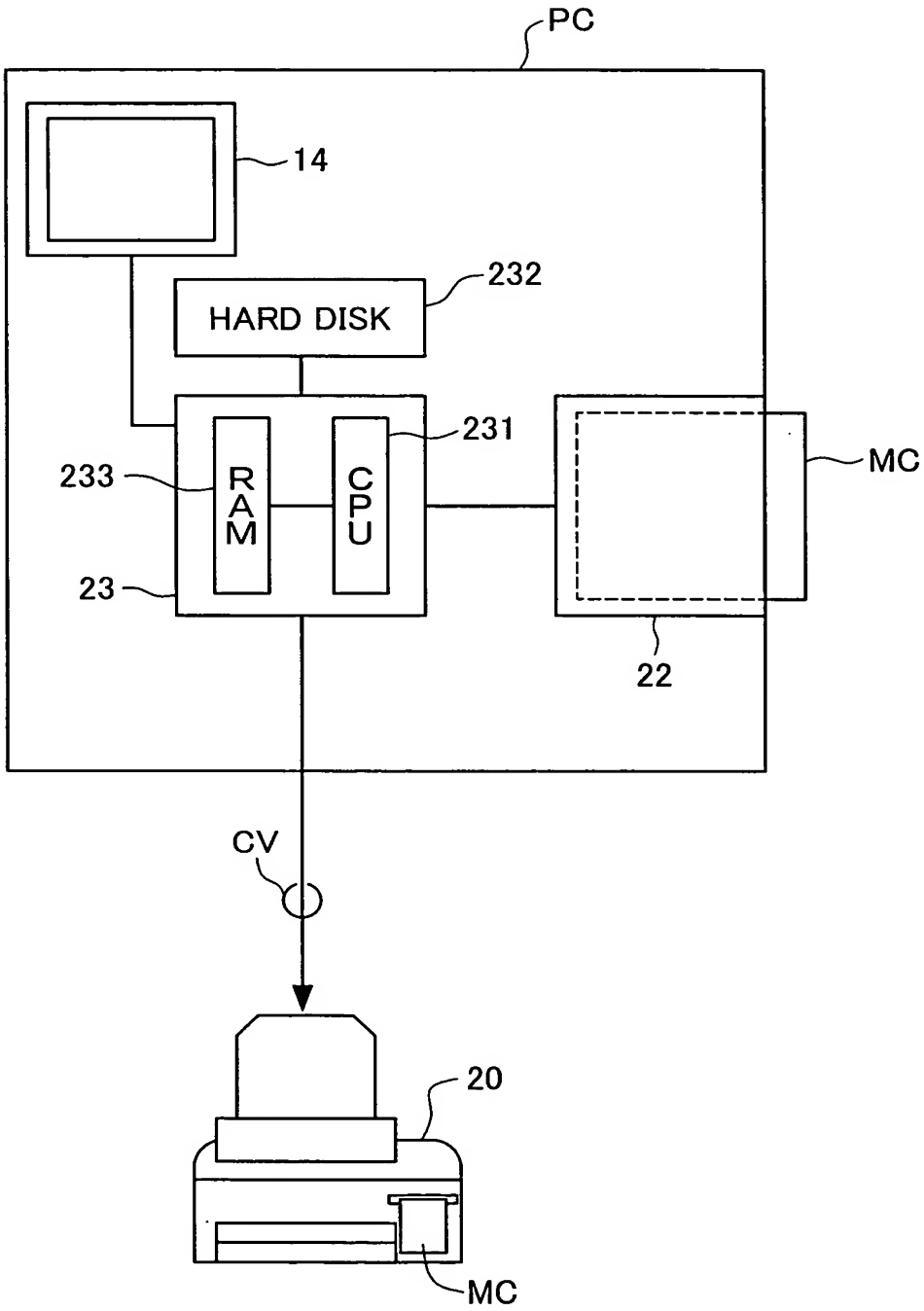
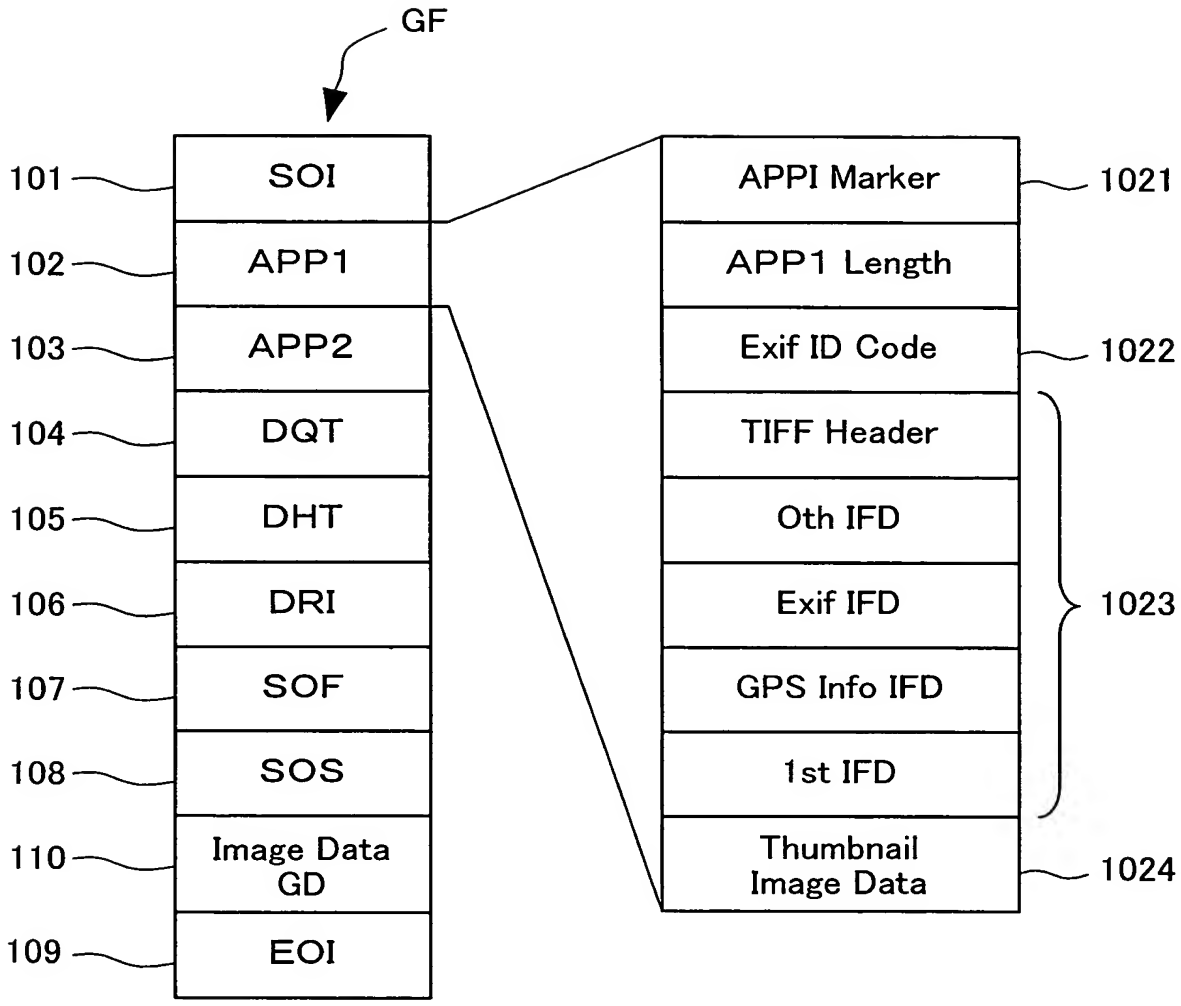


Fig.4


GF
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SOI
102
APP1
103
APP2
104
DQT
105
DHT
106
DRI
107
SOF
108
SOS
110
Image Data
GD
109
EOI
APPI Marker
1021
APP1 Length
Exif ID Code
1022
TIFF Header
Oth IFD
Exif IFD
1023
GPS Info IFD
1st IFD
Thumbnail
Image Data
1024

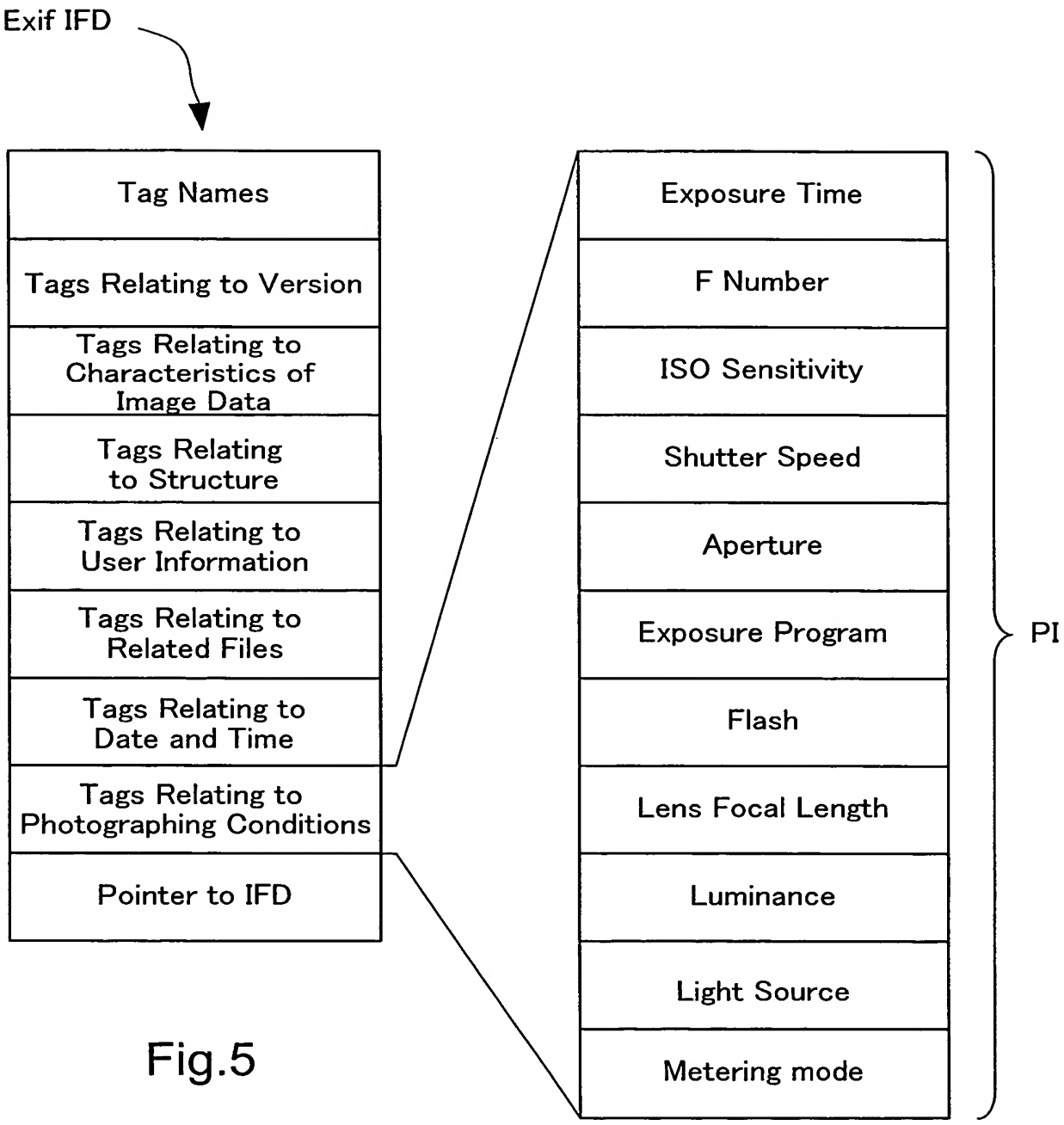

Exif IFD
Tag Names
Tags Relating to Version
Tags Relating to Characteristics of Image Data
Tags Relating to Structure
Tags Relating to User Information
Tags Relating to Related Files
Tags Relating to Date and Time
Tags Relating to Photographing Conditions
Pointer to IFD
Exposure Time
F Number
ISO Sensitivity
Shutter Speed
Aperture
Exposure Program
Flash
Lens Focal Length
Luminance
Light Source
Metering mode
PI

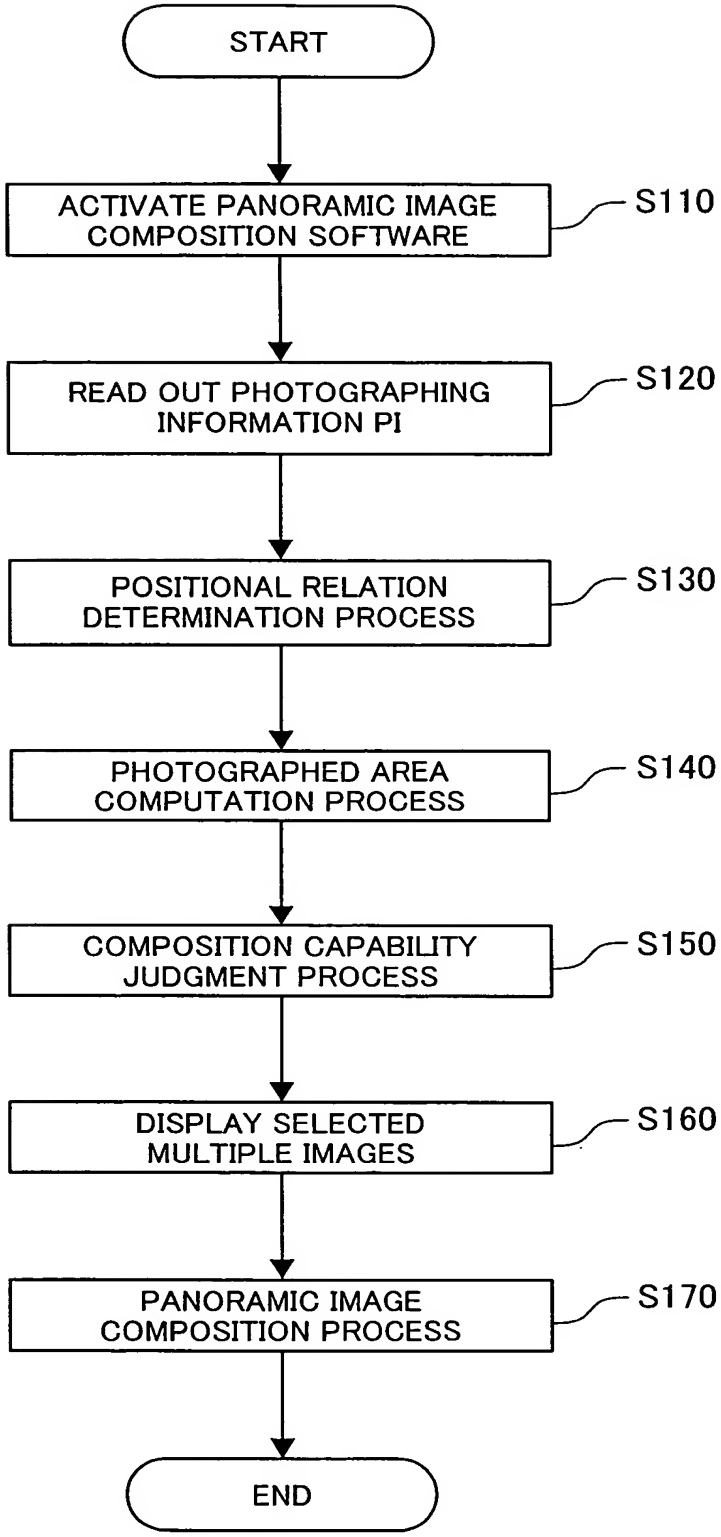
Fig.5

Fig.6

GPS Info IFD

Tag	Tag Name	Description
0	GPSVersionID	GPS Tag Version
1	GPSLatitudeRef	GPS NS Latitude
2	GPSLatitude	GPS Latitude (degree, minute, second)
3	GPSLongitudeRef	GPS EW Longitude
4	GPSLongitude	GPS Longitude (degree, minute, second)
5	GPSAltitudeRef	GPS Altitude Reference
6	GPSAltitude	GPS Altitude(m)
7	GPSTimeStamp	GPS Time(atomic clock)
8	GPSSatellites	GPS Satellites used for measurement
9	GPSStatus	GPS Receiver status
10	GPSMeasureMode	GPS Measurement Mode
11	GPSDOP	Measurement precision
12	GPSSpeedRef	Speed unit
13	GPSSpeed	Speed of GPS receiver
14	GPSTrackRef	Reference for direction of movement
15	GPSTrack	Direction of movement
16	GPSImgDirectionRef	Reference for direction of image
17	GPSImgDirection	Direction of image
18	GPSMapDatum	Geodetic survey data used
19	GPSDestLatitudeRef	Reference for latitude of destination
20	GPSDestLatitude	Latitude of destination (degree, minute, second)
21	GPSDestLongitudeRef	Reference for longitude of destination
22	GPSDestLongitude	Longitude of destination(degree, minute, second)
23	GPSBearingRef	Reference for bearing of destination
24	GPSBearing	Bearing of destination (degree, minute, second)
25	GPSDestDistanceRef	Reference for Distance to destination
26	GPSDestDistance	Distance to destination
27	GPSProcessingMethod	Name of GPS Processing Method
28	GPSAreaInformation	Name of GPS Area
29	GPSDateStamp	GPS Date
30	GPSDifferential	GPS Differential correction

Fig.7


START
ACTIVATE PANORAMIC IMAGE COMPOSITION SOFTWARE
S110
READ OUT PHOTOGRAPHING INFORMATION PI
S120
POSITIONAL RELATION DETERMINATION PROCESS
S130
PHOTOGRAPHED AREA COMPUTATION PROCESS
S140
COMPOSITION CAPABILITY JUDGMENT PROCESS
S150
DISPLAY SELECTED MULTIPLE IMAGES
S160
PANORAMIC IMAGE COMPOSITION PROCESS
S170
END

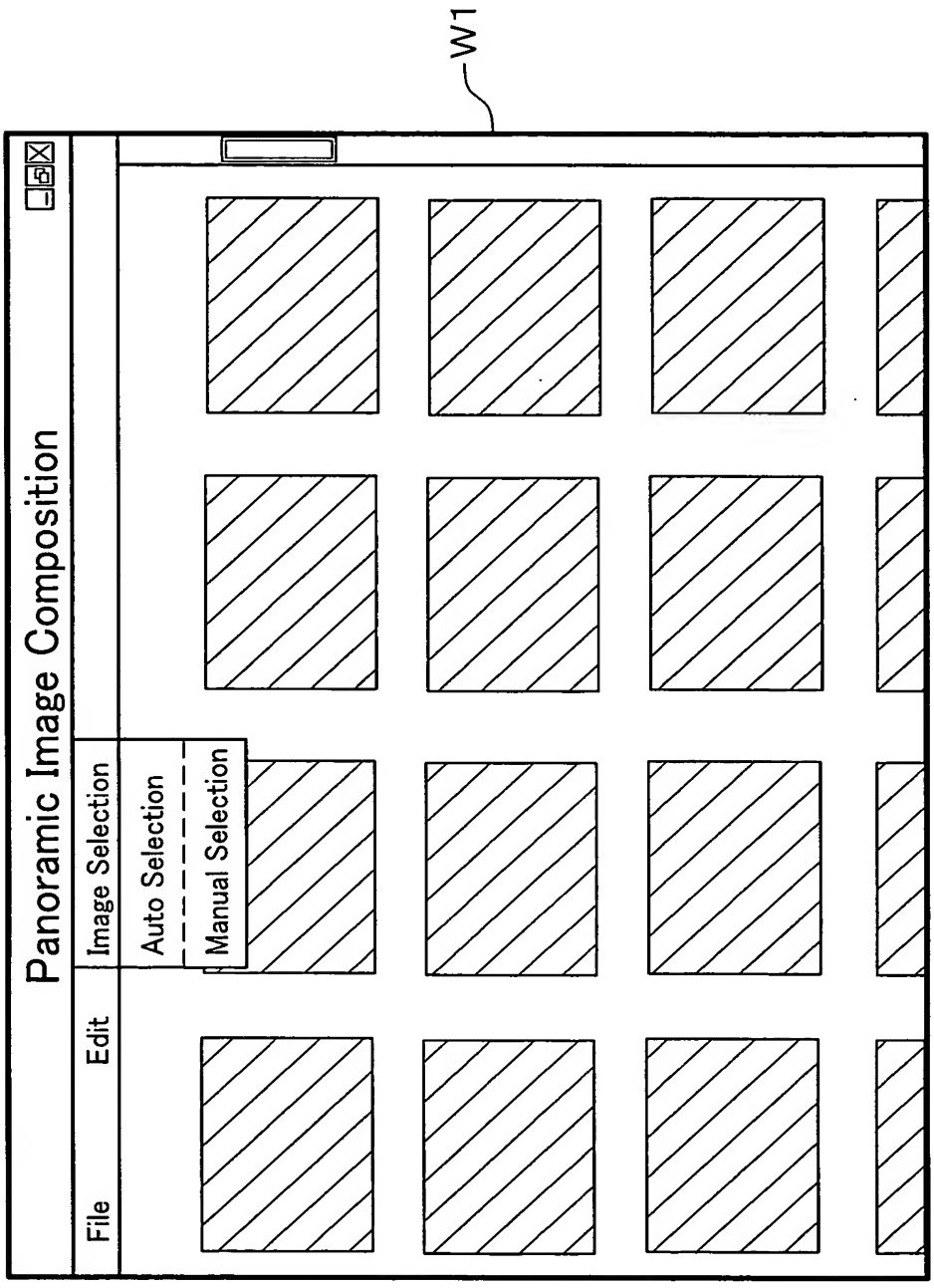

W1
Panoramic Image Composition
File
Edit
Image Selection
Auto Selection
Manual Selection

Fig.8

Fig.9(A)

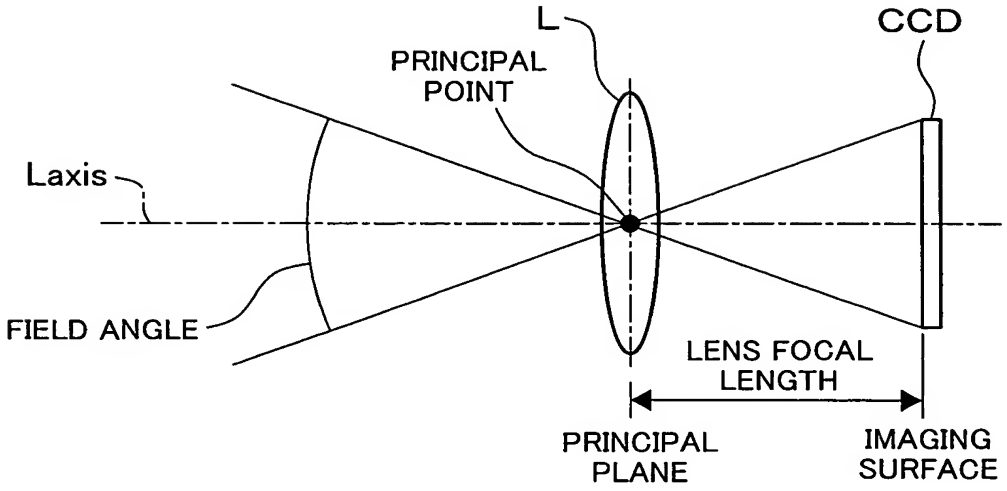

L
CCD
PRINCIPAL POINT
Laxis
FIELD ANGLE
LENS FOCAL LENGTH
PRINCIPAL PLANE
IMAGING SURFACE

Fig.9(B)

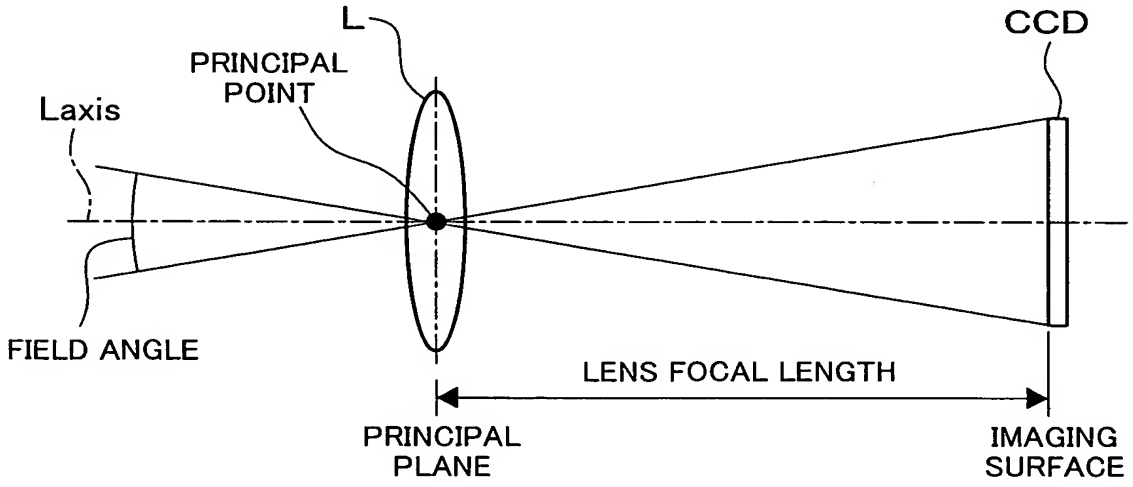

L
CCD
PRINCIPAL POINT
Laxis
FIELD ANGLE
LENS FOCAL LENGTH
PRINCIPAL PLANE
IMAGING SURFACE

Fig.10(A)

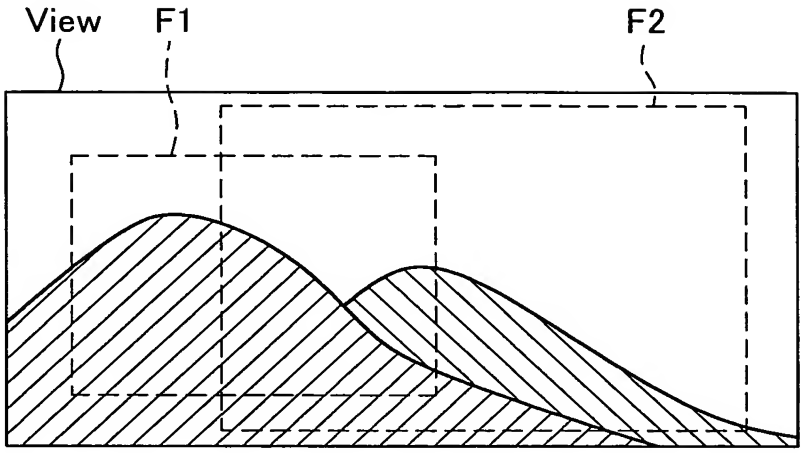


Fig.10(B)

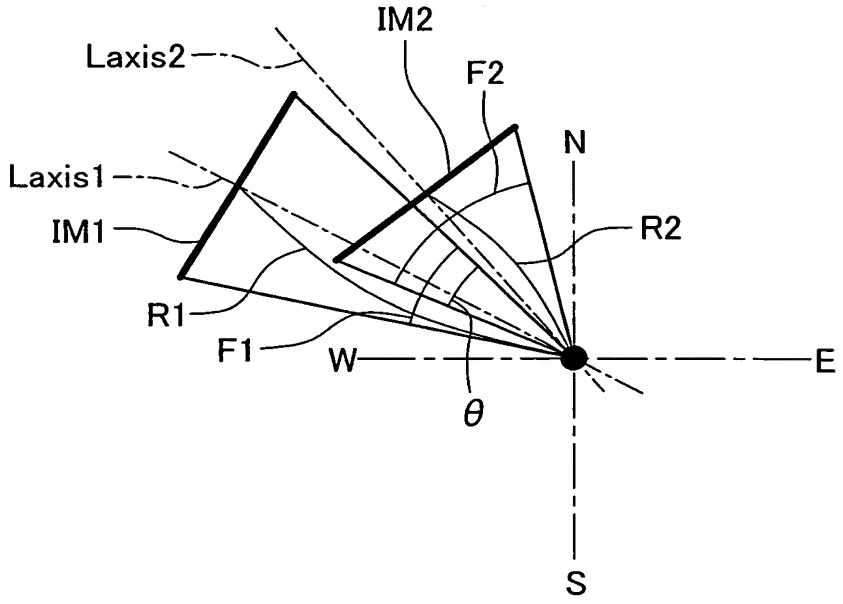


Fig.11

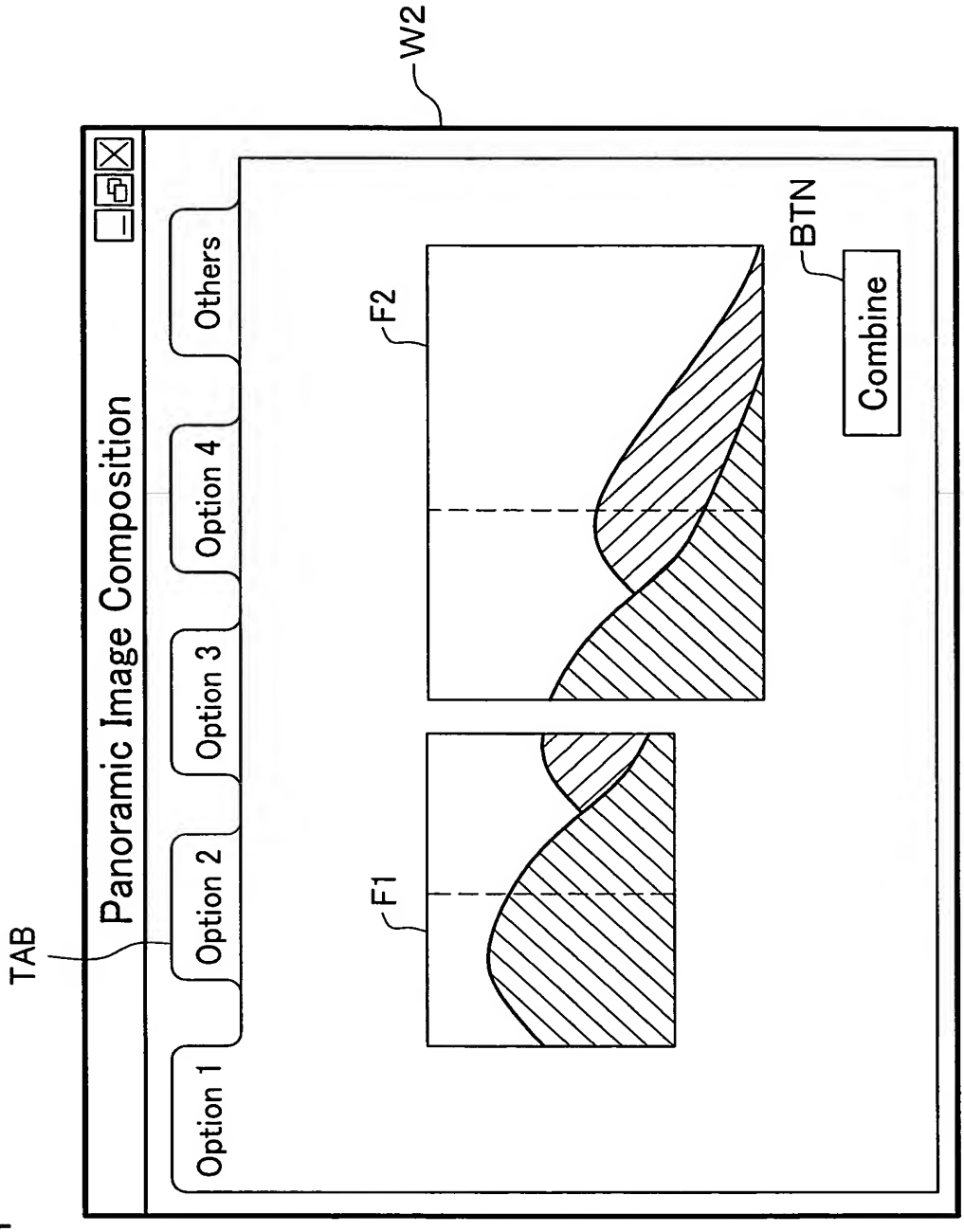

W2
Panoramic Image Composition
TAB
Option 1
Option 2
Option 3
Option 4
Others
F1
F2
BTN
Combine

Fig.12(A)

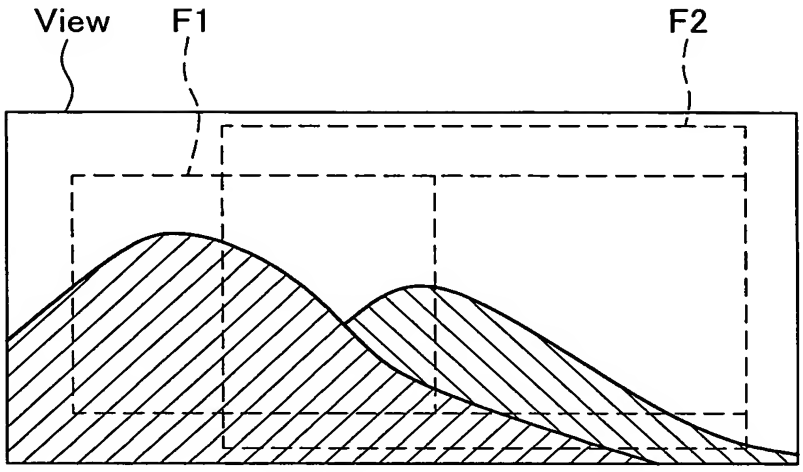
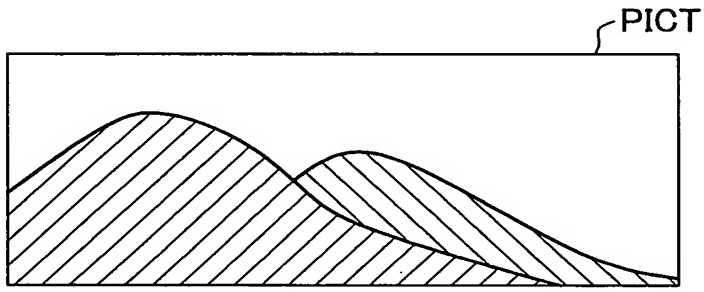



Fig.12(B)